

Claims

Claims 1-32 (canceled)

Claim 33. (new) An apparatus comprising:

a light source to produce light in first, second and third wavelength bands;

a plate-type transfective polarizing beam splitter

to receive the first, second, and third wavelength bands of light,

to transmit, in a first polarization direction, the first wavelength band of
light, and

to reflect, in a second polarization direction, the second and third
wavelength bands of light; and

a color filter

to receive the second and third wavelength bands of light,

to transmit in the second polarization direction, the second wavelength band
of light, and

to reflect in the second polarization direction, the third wavelength band of
light; and

first, second and third reflective liquid crystal light valves

to selectively reflect portions of the respective first, second and third
wavelength bands of light toward a projection lens.

Claim 34. (new) The apparatus of claim 33, wherein at least a selected one of the
reflective liquid crystal light valves includes a plurality of pixels selectively switchable
between a dark polarization state and an illuminated polarization state.

Claim 35. (new) The apparatus of claim 34, wherein the pixels of the first reflective liquid crystal light valve are to be selectively switched to the dark polarization state to reflect selected portions of the first wavelength band of light, in the first polarization direction, back through the plate-type transfective polarizing beam splitter toward the light source.

Claim 36. (new) The apparatus of claim 34, wherein the pixels of the second reflective liquid crystal light valve are to be selectively switched to the dark polarization state to reflect selected portions of the second wavelength band of light, in the second polarization direction, back through the color filter, off the plate-type transfective polarizing beam splitter, toward the light source.

Claim 37. (new) The apparatus of claim 34, wherein the pixels of the second reflective liquid crystal light valve are to be selectively switched to the illuminated polarization state to reflect selected portions of the second wavelength band of light, in the first polarization direction, through the color filter and the plate-type transfective polarizing beam splitter toward the projection lens.

Claim 38. (new) The apparatus of claim 34, wherein the pixels of the third reflective liquid crystal light valve are to be selectively switched to the dark polarization state to reflect selected portions of the third wavelength band of light, in the second polarization

direction, off the color filter and the plate-type transfective polarizing beam splitter toward the light source.

Claim 39. (new) The apparatus of claim 34, wherein the pixels of the third reflective liquid crystal light valve are to be selectively switched to the illuminated polarization state to reflect selected portions of the third wavelength band of light, in the first polarization direction, off the color filter through the plate-type transfective polarizing beam splitter toward the projection lens.

Claim 40. (new) The apparatus of claim 33, wherein the light source emits the first, second, and third wavelength bands of light in the second polarization direction.

Claim 41. (new) The apparatus of claim 40, further comprising:

a spectrally selective input device

to receive the first, second, and third wavelength bands of light from the
light source;

to transmit the first wavelength band of light in a first polarization direction;

and

to transmit the second and third wavelength bands of light in the second
polarization direction.

Claim 42. (new) The apparatus of claim 41, wherein the spectrally selective input device is of an optical retardation type.

Claim 43. (new) The apparatus of claim 33, further comprising:

one or more dichroic trim filters respectively associated with one or more of the first, second, and third light valves, to reflect selected wavelength bands of light without changing their polarization direction.

Claim 44. (new) The apparatus of claim 33, wherein the plate-type transfective polarizing beam splitter includes at least a selected one of a wire grid device, a multi-layer thin film device, a cholesteric polymer liquid crystal device, and a laminated polymer sheet device.

Claim 45. (new) A system comprising:

a video unit to output a video signal; and
a projection system, coupled to the video unit, to receive the video signal and project video, said projection system comprising
a light source to produce light in first, second, and third wavelength bands;
a reflective light valve arrangement optically coupled to the light source,
comprising a plate-type transfective polarizing beam splitter, a color filter,
and first, second and third reflective liquid crystal light valves; and
a projection lens optically coupled to the reflective light valve arrangement.

Claim 46. (new) The system of claim 45, wherein

the plate-type transfective polarizing beam splitter is to receive the first, second, and third wavelength bands of light, to transmit, in a first polarization direction, the first wavelength band of light and to reflect in a second polarization direction the second and third wavelength bands of light;

the color filter is to receive the second and third wavelength bands of light, to transmit in the second polarization direction the second wavelength band of light, and to reflect in the second polarization direction the third wavelength band of light; and

the first, second, and third reflective liquid crystal light valves to selectively reflect portions of the respective first, second, and third wavelength bands of light toward the projection lens.

Claim 47. (new) The system of claim 45, wherein at least a selected one of the reflective liquid crystal light valves includes a plurality of pixels selectively switchable between a dark polarization state and an illuminated polarization state.

Claim 48. (new) The system of claim 45, in which the first, second, and third wavelength bands of light each include a selected one of a green, a blue, and a red wavelength band.

Claim 49. (new) The system of claim 45, in which the light source emits the first, second, and third wavelength bands of light in a second polarization direction.

Claim 50. (new) The system of claim 46, in which the first and second polarization directions are substantially orthogonal linear polarization directions.

Claim 51. (new) The system of claim 45, further comprising:

each of the first, second, and third wavelength bands of light having selected ones of a first and second polarization direction; and

one or more dichroic trim filters respectively associated with one or more of the first, second, and third reflective liquid crystal light valves, to reflect selected wavelength bands of light without changing their polarization direction.

Claim 52. (new) The system of claim 45, in which the plate-type transfective polarizing beam splitter includes at least one of a wire grid device, a multi-layer thin film device, a cholesteric polymer liquid crystal device, and a laminated polymer sheet device.

Claim 53. (new) The system of claim 47, further comprising:

a controller, coupled to the video unit, to selectively control the plurality of pixels of the first, second, and third reflective liquid crystal light valves.